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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LI, JUN	

ART UNIT	PAPER NUMBER
1793	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/566,070	BERNSTEIN ET AL.	
	Examiner	Art Unit	
	JUN LI	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 March 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-7,11-13 and 21-31* is/are pending in the application.

4a) Of the above claim(s) *11-13 and 21-31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Restriction Election

Applicant's election of group I invention of claim 1-3 and claim 5-7 in the reply dated on March 2nd 2009 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim11-13 and 21-31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention of group II-VII, there being no allowable generic or linking claim. Election was made **without** traverse in the reply dated on March 2nd 2009.

The 112 2nd rejection on "one line segment" and "perfectly crystallized " is withdrawn due to applicant's persuasive arguments.

The 112 2nd rejections on "plot" and "stack" are withdrawn due to applicant's amendment, which resulted in the change of the scope of the instant claims.

DETAILED ACTION

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: In the instant specification, "plot" was used while in the claim "terminal" as changed as to overcome the

previous 112 2nd rejection about the indefiniteness of previous claim 1. It is to be noted that "plot "generally means figure, dot with no clearly definition in superconducting and electric filed and that terminal is a well known terminology in electric fields. Probable correction and explanation for interchangeable using of these two terms are required.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. **Claim 1, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al (US6066598) in view of Ahn (US 5834405)**.

Ishikawa teaches a method for forming a superconducting component with a stack of alternative superconductor layers and dielectric layers (i.e. insulating layer) (Figure 1) wherein superconductors (item 1, 2, 3, 4, 5 Figure 1) and thin-film dielectrics (item 30-1, 30-2, 3-0-3, 30-4, 30-5) are alternately laminated with each other thus a superconducting multilayer electrode is formed on the top surface of a dielectric substrate (Figure 1 item 10, column 3 lines 56-60) and a main transmission line (item LN10 Figure 10) and sub-transmission lines (LN1-LN4 figure 1) are formed (column 4 lines 35-46) there. Ishikawa also teaches a conductor (item 12 Figure 1) for an input terminal is formed on the direct substrate (item 10, Figure 1) and another conductor (item 13 Figure 1) for an output terminal is formed on dielectric substrate (column 5 lines 1-6) wherein

capacitive coupling between one end of superconductor 5 to the input/output terminal are used (column 5 lines 11-16).

Regarding claim 1, 3 and 5, Ishikawa fails to expressly teach incorporating at least one terminal in the submission lines, i.e. direct connection of terminal to the place of the capacitive coupling as described above.

Ahn teaches a method for extending the pattern of the metallic conductor lines and superconducting oxide reaction layer to a surface of the substrate to establish an electrical contact between (e.g. terminal means) at an appropriate portions of a superconducting ceramic substrate or superconducting multilayer (claim 20, column 6 lines 25-30).

It would have been obvious to one of ordinary skill in the art to adopt the direct contact (terminal means) as shown by Ahn to improve the superconducting component of Ishikawa for expanding different connections means between superconducting lines and for establishing terminals at an appropriate portion of a superconducting multilayer. Furthermore, it is to be noted that this direct incorporation terminal with the line segment is merely one of several obvious options that a person skill in the art seeking to solve the stated connection problem needed for particular connection for intended use of the superconductor component under certain circumstance.

It is to be noted that a prior step of depositing a superconducting film on a substrate followed by the depositing of stack is expected since superconducting and dielectric layers are alternatively laminated.

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al (US6066598) in view of Ahn (US 5834405) as applied to claim 1, 3, 5 above, and further in view of Lee et al (IEEE TRANSACTIONS ON MAGNETICS, 1991, 27**: 1365-1368)**.

The references of Ishikawa in view of Ahn have been described as above. The references do not expressly state that the material for superconducting and dielectric film is crystallized.

Lee et al teach that the $LaAlO_3$ and YBCO (i.e. $YBa_2Cu_3O_7$) (page 1365 left column “introduction" second paragraph line 2) can be used for superconducting multilayers (abstract lines 1-2), where $LaAlO_3$ and YBCO films can be crystallized (page 1366 left column “Results" first paragraph lines 1-4) with sharp and clean interface between the deposited insulating crystal $LaAlO_3$ and its substrate as indicated by Lee et al (page 1365 abstract lines 6-7).

It would have been obvious to one ordinary skill in the art the time of invention filed to crystallize the insulating and superconducting film of Lee to improve the superconductors of Ishikawa in view of Ahn. One of ordinary skill in the art would have been motivated to do so because the crystallization of the films can provide sharp and clean interface (i.e. Perfectly crystallized) between the insulating and superconducting film as indicated by Lee et al (page 1365 abstract lines 6-7). Furthermore, adopting a known technique for improving similar method is well within the scope of one ordinary skill in the art.

3. Claim 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al (US6066598) in view of Ahn (US 5834405) as applied to claim 1, 3, 5 above, and further in view of Higaki (US5219827).

The references of Ishikawa in view of Ahn fail to expressly teach etching the stack and the superconducting film.

Higaki teaches an etching method for producing an inductive component comprising means for depositing a stack of superconducting films by vacuum evaporation and insulating films and means for etching the superconducting film by hydrochloric acid (column 4 lines 10-11m 59-63, Figure 1 B, column 6 lines 29-39, 58-65), which read onto the recited well known depositing and etching method in the instant specification (page 7 lines 6-12).

It would have been obvious to one ordinary skill in the art the time of invention filed to adopt the etching technique as taught in Higaki to modify the multilayer superconductors of Ishikawa in view of Ahn. One of ordinary skill in the art would have been motivated to so because this known technique can successfully stack and etching different components of multilayer superconductors for a desired pattern as shown by Higaki. Furthermore, adopting known technique from a similar method is well within the scope of one ordinary skill in the art.

Response to Argument

2. Applicant's arguments with respect to claim 1-3 and 5-7 and have been fully considered but are moot in view of the new ground(s) of rejection.

3. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., about the line segment is not in contact with the terminal) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, as addressed in the new ground of rejection, the recited "no gap" feature is just an obvious selection from a finite number of identified connect ways including direct connection as recited in the instant application or an indirect connection with gap as in the recited prior art , thus this recited feature is also an obvious modification over the prior art.

The applicant's argument about reference Sung is persuasive, a new ground of rejection has been issued.

Conclusion

All the elected claims are rejected for the reasons of the record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUN LI whose telephone number is (571)270-5858. The examiner can normally be reached on Monday-Friday, 8:00am EST-5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Mayes can be reached on 571-272-1234. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JUN LI/

Examiner, Art Unit 1793

/J. L./

05/05/2009

/Melvin Curtis Mayes/

Supervisory Patent Examiner, Art Unit 1793